

REMARKS

Claims 1-21 are pending in the present application. Claims 5-21 have been added to more particularly define what Applicants regard as their invention. Claims 1, 4, 10, 14, 18 and 21 are independent.

Drawing Objection

The drawings are objected to because of several noted informalities. In view of the substitute pages of drawings submitted herewith Applicants respectfully traverse this drawing objection and request reconsideration and withdrawal thereof.

Title Objection

The Title is object to as not being sufficiently descriptive. Applicants have amended the Title and the above amendment and largely accept the Examiner's helpful suggestion. In view of this amendment, Applicants respectfully request reconsideration and withdrawal of the Title objection.

35 U.S.C. § 112, Second Paragraph Rejection

Claim 3 is rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed.

Specifically, the Office Action finds the term "the outside" as lacking antecedent basis. Furthermore, the Office Action states that this term is not clear.

First of all, Applicants respectfully submit that any allegedly unclear claim language in claim 3, at best, merely rises to the level of being objectionable. The Office Action does evidence an understanding of what is meant by "the outside" at least from the suggested Title and comments made in the art rejections. Furthermore, lack of antecedent basis is only objectionable and does not rise to the level of being properly rejected.

Nevertheless, claim 3 has been amended to remove this term thereby arguably broadening the scope of claim 3 while at the same time overcoming any potentially objectionable claim language.

In view of these amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 112, second paragraph rejection.

Art Rejections

Claim 4 is rejected under 35 U.S.C. § 102(b) as being anticipated by Normile (USP 6,028,965). Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Normile in view of Okada (USP 5,729,295). Claim 1 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Normile in view of Dunn

(USP 6,356,664). These rejections, insofar as they pertain to the presently pending claims, are respectfully traversed.

Normile is clearly the primary reference upon which the Office Action relies to reject the claims. As will be discussed below in detail, Normile teaches an invention substantially different than the claimed invention.

Normile is directed to a method of encoding and decoding data blocks which alters various encoding parameters of the encoding engine itself in order to efficiently compress and transmit compressed images (see column 1, lines 55-56). The encoding parameters that may be adjusted by Normile are the DCT coefficients which may be truncated by the truncate controller 520 (see column 6, lines 20-46). By truncating the DCT coefficients Normile may adapt the encoding amounts assigned to the image signal being encoded. In this way, the compression ratio of the image signal may be adjusted.

The Office Action points to this truncate controller 520 as allegedly teaching or suggesting the claimed selector. Such an equivalence is not justified and Applicants assert that the truncate controller 520 in no way teaches or suggests the claimed selector. Turning to the actual claim language, this argument is strengthened. The claimed selector limits the number of bits per pixel of the image signal to be encoded by the image encoding circuit. In contrast, the truncate controller 520 of Normile

variably truncates the DCT coefficients themselves which are part of the encodation process. The claimed selector as recited in claim 4 operates before the encodation process is performed and limits the number of bits per pixel of the image signal to be encoded. This is quite a distinct process and apparatus that is neither disclosed nor suggested by Normile.

Normile also discloses a pre-filter 311 which is further shown in Fig. 4 and discussed in his specification. This pre-filter 311 includes a noise filter 410 and a texture averager 460. The noise filter 410 includes an image averager circuit 440 that averages pixel data in those areas in which the image comparator 420 determines that the difference between a first image and a second image is less than a threshold value. By averaging portions of the image signal in this fashion, Normile reduces noise components and thereby produces a more efficient coding of the image data (see column 5, lines 15-37). Likewise, the texture averager 460 (which includes a pixel averager 490) identifies areas of the image which have a high rate of change. Such areas of a high rate of change typically include edges and textures in the image which are reduced by the pixel averager 490 in order to reduce the image data and thereby produce a more efficient encodation process.

Thus, in general, the pre-filter 311 merely filters the image data to generally reduce the amount of data to be encoded. This is an extremely distinct process and circuitry than the presently

claimed invention. None of the components of the pre-filter 311 in any way teach or suggest a selector that limits the number of bits per pixel of the image signal to be encoded.

As discussed above, the pre-filter reduces the amount of high-frequency components through high-pass filtering and averaging processes which has no effect on the number of bits per pixel. Even if it did, such a pre-filter does not operate in response to or according to a bit rate of the transmission path. Thus, Normile fails to disclose or suggest a selector limiting the number of bits per pixel of the image signal to be encoded according to a bit rate of the transmission path as recited in independent claim 4.

Furthermore, Normile does not disclose or suggest the claimed encoded region designator as set forth in independent claim 1. Instead of providing evidence of this encoded region designator, the Office Action engages in mere hand waving. This is quite evident from the Office Action itself which states that "the encoded region designator may be provided by Normile in a broad sense, since Normile provides for causing certain portions of the image to be coded or not coded or coded differently based on the transmission bit rate" (see January 30, 2004 Office Action, page 5, lines 8-10).

There is no such region designation disclosed or suggested by Normile. Normile in no sense (and not even a broad sense) discloses or suggests causing certain portions of the image to be coded or

not coded based on or according to the transmission bit rate. Although the Office Action attempts to provide evidence, a full review of Normile will reveal that the transmission bit rate is merely utilized by Normile to adjust the encoding parameters such that the incoming image data compression ratio is adjusted so as to maintain a particular target bit rate on the output transmission path (see column 2, lines 42-51. See also column 4, lines 59-64). As discussed therein, the encodation parameters themselves are adjusted so that the output of the encoder matches the bit rate of the transmission channel.

As one example, the image reduction controller 307 (see the paragraph bridging columns 4 and 5) of Normile is adjusted so as to reduce the total image size via a sub-sampling process. This image reduction controller reduces the entire image data and there is no designation of a region. Even if there were such a designation of a region, it is not dependent upon the bit rate of the transmission channel.

Indeed, the bit rate of the transmission channel is only utilized in a very limited sense as a target rate for the output of Normile's encoder. This is also made clear in column 7, lines 40-45 which states as follows:

"The output processor 730 issues the reduction control signal on line 341, the threshold signal on line 342, the truncate signal on line 344, or the preference signal on line 346 in order to reduce encoded data so that a particular bit rate target is achieved while servicing the update request."

See also column 8, lines 3-10 stating in part that "maintaining a particular bit rate target affords increased efficiency for the transfer of the lossless compressed data, improved decoding of the lossless compressed data, and better image quality at the display." There is no disclosure, suggestion or even vague hint of using the bit rate to designate certain regions for encodation in Normile.

The Office Action's statement of obviousness is clearly incorrect. The Office Action states that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to consider regions being designated by Normile, since Normile provides for selectively reducing part of the image, filtering some parts of the image, truncating some parts of the image, truncating some parts of the transform image, and set some motion vectors to zero." (Office Action page 5, lines 15-18).

As explained above the selective filtering of Normile merely reduces the amount of image data, (particularly high-frequency components) to be encoded by Normile's encoder circuit. There is simply no region designation such that some regions are encoded while others are not. As is made quite clear above, the selective filtering of Normile merely reduces the amount of image data to be encoded and provides no such region designation. Furthermore, the truncation of the DCT coefficients happens within the encoder

itself and in no way teaches or suggests preselecting some regions or designating some regions to be encoded while others are not. These are entirely distinct concepts and it certainly would not have been obvious to one of ordinary skill in the art to extend Normile's invention as suggested by the Office Action.

Furthermore, neither Okada nor Dunn remedies any of the noted deficiencies in Normile. While region selection in and of itself may be conventional, neither Okada nor Dunn teaches or suggests the specific encoded region designator as recited in independent claim 1 that designates regions to be encoded according to a bit rate of the transmission path. While Okada does appear to disclose specifying certain areas of the image such as encoding the face area of an image there is no such selection or designation of a region to be encoded according to the bit rate of the transmission path. The only mention of transmission rate that can be found in Okada relates to output speed matching. As discussed in column 6, lines 49-54 of Okada, a buffer memory 26 is utilized such that the output of the encoding portion 25 is matched to the transmission rate of the communication line. There is simply no relation of bit rate to region designation disclosed or suggested by Okada.

Likewise, Dunn also fails to disclose or suggest any such encoded region designator that designates regions to be encoded according to a bit rate of transmission path. At best, Dunn teaches a conventional marking scheme in which certain portions of the

image may be marked differently from other portions. For example, the foreground may be marked as a highly important region while the background may be marked as a less important region. Any such selective encoding performed by Dunn is solely with respect to these pre-marked regions and does not depend in any fashion upon the bit rate of the transmission path. This feature is simply absent from all of the applied art and even a combination thereof completely fails to disclose or suggest the invention as recited in claim 1.

For all of the above reasons, taken alone or in combination, Applicants respectfully request reconsideration and withdrawal of the art based rejection.


Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael R. Cammarata (Reg. No. 39,491) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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